

heating this mixture, there is immediately formed a copious precipitate of a dirty white colour; the liquor is then to be filtered, and the solution treated by sulphate of soda in excess. If, for example, we have added 4 grs. of acetate of lead, we add 8 grs. of sulphate of soda. This being done, the mixture is again heated, and sulphate of lead is deposited; we then filter once more, and there is afforded a clear transparent liquid, which contains the sugar, when there is any, and some unimportant salts. The liquid thus obtained is neither acted on by the cupro-potass reagents, nor browned by the caustic potass, *unless* sugar is present. These two reagents are in this way perfectly reliable, very accurate, and afford no results when no sugar is contained.

"Should the urine under examination contain albumen, it is immediately coagulated by the acetate of lead at the same time as other organic matters, and gives no further trouble.

"Thus, in all cases where it is desired to ascertain the existence of sugar in the urine, whether along with albumen or not, we possess two excellent reagents in the cupro-potass solution, and in the caustic potass itself; only we require, in the first place, to treat the urine with the acetate of lead and the sulphate of soda, by which means we get rid of all such matters as decompose or discolour the cupro-potass or caustic potass tests.

"Since January, 1855, up to the present time, the urine of all the patients under my care—and these have amounted to nearly 2000—has been examined according to the above method. But besides this, in all cases where the presence of sugar was determined, there was also an examination made by means of the polarimeter, in order to discover the precise quantity of that principle contained in every thousand grains of urine. These numerous cases have afforded some curious results which I would desire to lay before the Society.

"Two species of diabetes appear to exist, viz., idiopathic diabetes, or diabetes properly so called, and symptomatic diabetes. With reference to diabetes properly so called, I have here nothing to say; it is a disease special in its causes, and having an origin, a progress, and a termination altogether peculiar to itself. That to which I at present allude is a disease of a somewhat different nature, viz., symptomatic diabetes. By this name I would refer to a certain number of cases in which the presence of sugar in the urine constitutes an accessory or supervening symptom. This is a symptom which, like albuminuria, is common to very different diseases, and one which would never be suspected unless the urine were submitted to examination.

"The characters of symptomatic diabetes are as follows:—

"1st. The quantity of sugar contained in the urine is never very great, although I have frequently found as much as 25 or 26 grs. in 1000, which is a pretty considerable proportion, but less than exists in idiopathic diabetes, where it often reaches as high as 40, 50, 60, and even 80 grs. in 100.

"2d. The urine is very little or never increased in quantity.

"3d. Although the density of the urine is no doubt increased, yet it is only to a very slight extent.

"4th. The sugar does not alter the other chemical elements contained in the urine.

"5th. There are no phenomena present attributable to the fact of sugar being contained in the urine; there is neither the increase of appetite, nor the immoderate thirst of idiopathic diabetes.

"Symptomatic diabetes shows itself occasionally in diseases of the brain and spinal cord, of the liver, of the digestive apparatus; in disease connected with parturition and lactation; and in other affections of various descriptions."—*Ed. Med. Journ.*, Nov. 1857, from *L'Union Médicale*, Aug. 1857.

7. *On the Presence of Sugar in the Urine of Pregnant, Parturient, and Puerperal Women.* By THEODORE KIRSTER, of Leipzig.—The researches of Blot on the presence of sugar in the urine of pregnant, parturient, and puerperal women, suggested to Dr. Kirsten the expediency of independent inquiries with a view to the verification of Blot's results. M. Blot arrived at the conclusion¹

¹ See Midwifery Report, British and Foreign Medico-Chirurgical Review, April, 1857.

that the presence of sugar in the urine of women under these circumstances was a physiological phenomenon; and that its disappearance was the result of an intercurrent pathological condition. Dr. Kirsten observes, that if this conclusion were true we should possess in the disappearance of the sugar a tolerably sure measure of the condition of a puerperal woman, since this would indicate a commencing pathological disturbance, whilst its return would indicate convalescence. Dr. Kirsten examined the sugar relations in two women. His observations do not altogether accord with those of M. Blot: they rather point to the reverse condition—namely, that sugar is present in greatest quantity in the urine of puerperal women when the milk-secretion—whether through a pathological process, or the weaning of the child—is arrested. Thus he observed in several puerperal women whose children had died, that on the second, third, or fourth day after the death the sugar appeared in greatest plenty. After this time, the quantity fell in the same degree as the milk diminished; but in four cases it could be demonstrated twelve days later. In three cases in which the patients were seriously ill in the puerperal state, and in whom the milk-secretion was almost null, the sugar was found in greatest quantity. One of these last women had suffered from common oedema during pregnancy. The examination of her urine revealed copious albumen, which diminished with the oedema, without disappearing altogether. Towards the end of pregnancy traces of sugar became apparent. She was delivered easily of a badly-nourished child. Repeated attacks of peritonitis followed. The milk-secretion was very scanty, and the milk very thin: sugar was present in the urine in abundance. In the second patient, who suffered from peritonitis, followed by pyæmia, Dr. Kirsten was able to detect sugar up to the day before her death, this substance having been present in great quantity at the beginning of her illness. The third case was quite similar. On the other hand, he was rarely able to discover more than mere traces of sugar in the most healthy women, who had well-nourished children and a superabundance of milk.

It hence appears that glycosuria belongs rather to pathology than to physiology. The key, Dr. Kirsten thinks, is to be found in the most recent researches of Bernard. This physiologist has shown that the formation of sugar in the liver is especially apparent when the abdominal circulation is increased, and the temperature rises. The biliary matter chiefly turns into sugar at a temperature of 40° Cent. No time was more favourable for this transformation than gestation, when the abdominal circulation and temperature are always raised to the necessary point for sugar-formation: whence we ought always to expect glycosuria in pregnant women. But as this is not the case, we are obliged to conclude that the greater quantity of sugar produced at this period is wanted for the nourishment of the child, so that it cannot be excreted. It would be interesting, with a view to the verification of this hypothesis, to examine the urine of women whose children may die, as quickly as possible after their death.

During the puerperal week the abdominal circulation is lessened, and the afflux of blood takes place towards the periphery, as is evidenced by the milk-secretion and sweats. This condition would not be favourable to the formation of sugar.—*Brit. and For. Med.-Chirurg. Review*, October, 1857, from *Monatsschr. f. Geburtsk.*, June, 1857.

8. *On the Elimination of Sulphuretted Hydrogen by the Lungs.*—M. CL. BERNARD desires to contribute to the solution of the question, why it is that sulphuretted hydrogen, which can be swallowed in large quantities with impunity, will cause the death of a medium-sized dog, when breathing in the proportion of $\frac{1}{3}\%$, and of a horse, when in the proportion of $\frac{2}{3}\%$. Two hypotheses may be raised. Either it is not absorbed in the alimentary canal, but digested, and its peculiar effects neutralized; or, after becoming absorbed, it is modified, and eliminated before it can reach the arterial system: the arterial blood being, in fact, the immediate vehicle of all physiological and toxic action, inasmuch as it is it which passes directly to the capillaries, where all organic changes take place. In the event of this last hypothesis being the correct one, we have to determine by what organ the elimination is accomplished. The pulmonary